TASK FORCE EXCEL AND THE SCIENCE OF LEARNING
(Release Number TFE0116) – March 6, 2002
By JOCS Denny Banister, Task Force EXCEL Public Affairs

TASK FORCE EXCEL HUMAN PERFORMANCE CELL, Orlando, Fla. –

Traditionally, Navy education and training came in one of two packages, classroom or correspondence. While both methods are proven and have served the needs of the Navy well over the years, new technologies such as E-Learning, are enhancing those experiences.

The Navy launched the Revolution in Training, the Chief of Naval Operations Adm. Vern Clark's initiative to revitalize training and education, in an effort to incorporate those technologies and other alternative course delivery methods. Another way the Navy is navigating a new educational course, in an effort to create a culture of learning, is by applying recent findings about how people learn, creating revolutionary changes in the Navy's training program.

"The science of learning will transform the Navy's training environment by applying the latest advances in technology and educational psychology to the learning task," said Lt. Cmdr. Alan Nordholm, Task Force for Excellence through Commitment to Education and Learning Human Performance Cell deputy director. "It will move Navy training from a 'lecture, listen, learn' mentality to a more active learning process, providing Sailors an opportunity to receive hands-on practice where appropriate."

That practice then enables Sailors to demonstrate the knowledge, skills and abilities they learn, whether in a traditional classroom setting, via the internet, using a simulator or in a blended environment. It also means Sailors will receive feedback necessary to improve their performance.

Much of the Navy's professional development is based on this lecture and listen technique – the person with the knowledge lectures, and the person hoping to attain the knowledge listens. But the science of learning, a research field only three decades old, says students retain knowledge best when they apply theory while learning. According to Jan Cannon-Bowers, a Ph.D. in Industrial/Organizational Psychology and the Human Performance Cell director, there are several factors that influence a student's motivation to learn.

"First, adult learners must have the desire to learn the subject matter and recognize its importance to success on their job," she said. "Also, the material must be meaningful and actively engage and involve students. Finally, the learning process can be fun—for example, we are investigating ways to use computer gaming technology as a means to enhance the training process."

One of the best ways to learn is having a personal tutor. That's because the individual attention provided by a tutor improves retention on the part of the student. By tailoring information to the student's level of understanding and needs, tutorial teaching sharply improves learning.

Having an individual private tutor for every Sailor in the Fleet is unrealistic, of course – but one kind of tutor is already available to every Sailor in the Fleet - the computer. The Navy is taking advantage of computerized tutoring systems capable of tracking each Sailor's progress and tailoring feedback and suggestions for personalized instruction designed to improve understanding. Of course, whether students receive tutoring from humans or computers, they must be motivated.

"The Navy, like industry, is coming to the realization that Distance Learning and other forms of computer-based training can improve the educational process," said Nordholm. "However, the jump to these new methods must be based on a thorough understanding of the learning task and requirements on the job. Our goal is to apply the right learning system for the task at hand so that mission accomplishment is optimized."

In far too many lecture situations, students' minds wander because the professor's presentation lacks personal relevance. By the time the subject becomes relevant, the student may be totally tuned out. If students understand why the information is important at the outset, however, they have a greater chance of becoming engaged in the lesson and actually understanding and learning the subject. Transferring knowledge is complex – the *teacher's* understanding of the subject is not nearly enough to make students learn it. The "science of learning" suggests teaching theory on the job hones skills and improves retention by putting the lesson into practice. In this environment, students not only realize the results of the lesson, but they also receive supervisor and peer input and support. Students in this scenario are no longer on their own – they have the support of others they depend upon, and who depend upon them, involved in their learning experience.

"On the job training is a crucial part of Navy training and it will continue to be," said Cannon-Bowers. "Our goal is to improve the way we conduct this OJT by providing better tools, equipment, and preparation. For example, enhanced embedded training, deployable trainers, and instruction for mentors and instructors are all being planned."

The Revolution in Training is combining computerized tutorials, hands on training, and supervisor and peer input and support. Mutual dependence is the foundation for building

a culture of learning – and the revolution providing Sailors the tools and opportunities they need to grow professionally and personally. To learn more about the Revolution in Training and the science of learning, visit www.excel.navy.mil